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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/811,844	03/19/2001	Louis Peter Huber	P04870US0	9248

22885 7590 12/10/2003

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EXAMINER

EASTHOM, KARL D

ART UNIT PAPER NUMBER

2832

DATE MAILED: 12/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/811,844

Applicant(s)

HUBER ET AL.

Examiner

Karl D Easthom

Art Unit

2832

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,7-11,16-18,20,22-25 and 30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,7-11,16-18,20,22-25 and 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

Art Unit: 2832

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 30 is rejected under 35 U.S.C. 102(b) as being anticipated by Chiang et al. (WO 99/53505). The claimed invention is at Fig. 6. The substrates are 55, with end caps 31, 51 on the ends thereof, and the resistive films 17. The resistors are electrically connected by the barriers or connections 54 at Fig. 9. Pages 10-11, lines 25-5, disclose that the encapsulant 53 can be a nonadhesive and also cover the whole length of the device so that there will be no contact.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami et al. in view of Chiang et al. (WO 99/53505). Murakami discloses the claimed invention except the stacking and barriers. Chiang discloses stacking at fig. 6 with connecting barriers for the purpose of forming the devices in parallel and forming footprint of two devices at pages 1-2, so that it would have been obvious to stack the Murakami device for that purpose. Applicant also admits it is known to stack chip resistors at pages 1-2. The film resistors have substrates 1,

Art Unit: 2832

resistive element 2. The encapsulant 10 prevents the surfaces of the first film resistors from touching, or the encapsulant 53 of Chiang would prevent same.

5. Claims 1-2, 7-11, 16-18, 24-25 rejected under 35 USC 103 as being unpatentable over Chiang et al. (WO 99/53505) in view of either Abe et al. '390 or Kawase '723. The claimed invention is disclosed at Figs. 6-9 of Chiang except the barrier made of nickel and glass frit. Nickel is a well known conductor, and Abe teaches its use as a replacement for solder at col. 4, lines 40-47, so that it would have been obvious to employ that for the solder barrier 54 of Chiang for the purpose of replacing that solder with a known good available conductor for resistors such as the nickel or nickel alloy suggested. Similar remarks apply to Kawase at the top of col. 4. Chiang also discloses that any good conductor can be used at page 11, lines 39+. For claim 30, the encapsulant is 53. For the remaining claims, element 53 is described as an insulator at page 10, and is not an adhesive for one embodiment, meeting the claims. The Examiner takes Official Notice that glass is a well known electrical insulator, see The Random House College Dictionary (revised 1980), as proof therefor, defining insulator as "a material of low conductivity, as glass or porcelain..." Also Abe discloses glass 5 for joining resistor layers together. Similarly, Kawase at col. 5, lines 60-67 teaches using glass paste for pasting together and stacking different resistor layers. Hence, given the Chiang disclosure of insulator as the preferred material in combination with the known definition and suggestions by Abe or Kawase, it would have been obvious to employ a known material having the desired properties in order to perform the function which is suggested, that of insulation and as an aid in stacking. As to the remaining claims reciting more than one chip, at page 12, several devices are disclosed as stacked together, meeting the claims. In claim 2, the resistive element is a polymer with metal

Art Unit: 2832

and nonconductive fillers, that could be described as a thick film, see page 5. The substrates are 55, with end caps 31, 51 on the ends there of, and the resistive films 17. The resistors are in parallel and electrically connected by the connections 54 at Fig. 9. The lead borosilicate glass is a glass frit, where frit is the fused materials used in glass making according to Websters II New Riverside University Dictionary. See also Holmes which uses glass frit, glaze and glass interchangeably, using a lead borosilicate glass at page 139 as the glass frit. For claim 30, pages 10-11, lines 25-5, disclose that the encapsulant can be a nonadhesive and also cover the whole length of the device so that there will be no contact.

6. Claims 1-3, 7-12, 16-18, 20, and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 6283301 in view of Hashimoto, or as an alternative, further in view of Claypool. JP '301 discloses the claimed invention at Fig. 6c except the nickel barrier and except for disclosing film resistors stacked together with glass therebetween. JP '301 discloses elements 31,32,33 can all be resistors of the same type, where different types of chips that are the same size are stacked together to save space, and since two or more chip elements are disclosed as stacked. Further, applicant admits at pages 1-2 that the resistors of the same type have been stacked as is known to increase capacity. Finally, the chips of Hashimoto suggest stacking where they are greater in height than the middle so that they can be flipped or stacked. The end caps are of sliver for claims 18 and 22. The adhesives noted on page 2 of the machine translation are noted as "desirable", hence, it is contemplated that they will not be used. The metal barrier is 13. While the barrier is noted as Cu, other metals are disclosed generally at par. 15, nickel barriers are known for attachment to metal end caps and for solderability, such as the nickel 9a of Hashimoto. It would have been obvious to replace the Cu metal cap 33 with

Art Unit: 2832

one made of nickel where each reference discloses a metal connected to a ruthenium resistor, for the purpose of forming a good solderable lead where the purpose is to solder the device of '301 to a circuit board. The glass layer of Hashimoto 94 – which is a lead borosilicate glass meets the claims as the glass frit for the claims (for reasons noted above) , since it would be between the stacked chips. Or, it would have been obvious to employ glass as a cover for the resistors of JP '301 where they are depicted as though the resistive film is covered since it is not shown, for the purpose of protecting the resistor from the environment. In claim 16, several are disclosed as stacked so that it would have been obvious to employ any number for stacking. As the alternative, Claypool discloses a barrier terminal of comprising nickel or a nickel alloy at col. 3, lines 1-17 that is similar to that of JP '301 and useful for resistors or capacitors, such that it would have been obvious to replace the barrier of JP '301 which appears similar to the barrier of Claypool where both are used to join stacks of electrical elements together.

7. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 6283301 in view of Hashimoto, further in view of Nakamura et al. The invention is disclosed as noted above except the silver palladium. That composition is a known electrode for ruthenium resistors as disclosed by Nakamura, such that it would have been obvious to employ it for the electrodes of JP '301 as modified.

8. Applicant's arguments filed 10/23/03 have been fully considered but they are persuasive. Applicant argues that Chiang Fig. 6 does not disclose the substrate 55 as below the resistive film 11, 12. This is not correct, the substrate 55 is on both sides of each of the films 11,12 because the device is symmetrical as noted at page 13, lines 20-25. The dotted lines on both films 11 and 12 indicate the gap under the dielectric 55 on tops of the films, see page 14,

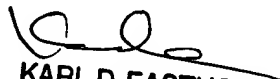
Art Unit: 2832

lines 4-7. There is a similar gap on the right hand side of the figure under the device. Or one can simply turn the device upside down since it is symmetrical. As to Hashimoto, applicant argues that the reference does not disclose motivation for the glass. There is no need to provide separate motivation for the glass because Hashimoto is disclosed as a type of chip that is suggested as stacked, and the chip happens to have glass.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl Easthom whose telephone number is (703) 308-3306. The examiner can normally be reached on M-Th from 5:30AM to 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad, can be reached on (703) 308-7619. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


KARL D. EASTHOM
PRIMARY EXAMINER